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Role of Yoga in Lifestyle Disorders w.s.r. to Diabetes Mellitus Type-2

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ABSTRACT

21st century is full of stress requiring more speed and accuracy. In today's world of competition, diet pattern, lifestyle and behavioral pattern of people has changed. Late working hours, deadlines of work and stress have become a parcel of daily life. Due to this people have won't have time for exercise and Yoga and end up in various lifestyle disorder, like Diabetes mellitus, Dyslipidemia, Obesity, Cardiovascular diseases etc. Diabetes mellitus is one of most leading disorder in all of them. The worldwide prevalence of D.M. has raised dramatically over past two decades, from an estimated 30 million cases in 1985 to 177 million in 2000. Based on current trends, > 360 million individuals will have diabetes by the year 2030. Diabetes mellitus is mentioned in our *Samhitas* as disorder of lethargic and exercise less lifestyle disorder and termed it as *Madhumeha*. Caused by mainly *Apathyaahara* and *Viharsevana*. *Chikitsa* of *Madhumeha* focused on *Pathyaahara* and *Vihar* (lifestyle) in management of *Madhumeha*. This article is deal with healthy lifestyle including Yoga mentioned in *Ayurveda Samhita* for management of prevention and treatment of Lifestyle disorders.

Key words: Yoga, Lifestyle Disorders, Diabetes Mellitus Type-2, Madhumeha.

INTRODUCTION

Type 2 diabetes and its pre-diabetes antecedents belong to a cluster of conditions thought to be caused by resistance to insulin action. Thus, people with type 2 diabetes often have associated disorder including hypertension, dyslipidaemia, non-alcoholic fatty liver disease and in women polycystic ovarian syndrome. This cluster has been termed the 'insulin resistance syndrome', or 'metabolic syndrome' and is much common in obese individuals.^[1]

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Type 2 diabetes mellitus is metabolic disorder, a clinical syndrome caused by hyperglycaemia due to absolute or relative insulin deficiency. The word diabetes has been derived from two word, Diabetes (Greek) which means siphon like and 'Mellitus' (Latin) which means 'sweetened with honey'. Type 2 DM likely encompasses a range of disorders with common phenotype of hyperglycaemia.^[2]

Type 2 DM is characterised by impaired insulin secretion, insulin resistance, excessive hepatic glucose production and fat metabolism. Obesity, visceral or central is very common in type 2 DM. In early stages of disorder, glucose tolerance remains near normal, despite insulin resistance, because pancreatic beta cells compensate by increasing insulin output.^[3]

Though the prevalence of both type 1 and type 2 DM is increasing worldwide, the prevalence of type 2 DM is rising much more rapidly because of increasing obesity and reduced activity levels as countries become more industrialised.^[4] This is true in most countries, and 6 out of top 10 countries with the highest rates are in Asia. Diabetes was India's 7th

largest cause of early death in 2016.^[5] 7.3% or 69.2 million of India's adult population has diabetes. Urban areas have prevalence of 11.2% while rural areas have prevalence of 5.2%. Prevalence of diabetes in Maharashtra is 10.9% in urban areas and 6.5% in rural areas.^[6]

Factors responsible for type 2 DM^[7]

1. Obesity
2. Sedentary lifestyles
3. Family history
4. Over nutrition
5. Physical inactivity (lack of exercise)

Pathophysiology^[8]

All the factors ultimately lead to

- Metabolic abnormalities - Abnormal muscle and fat metabolism
- Insulin resistance - insulin ability is decreased to act on muscle, liver and fat.
- Abnormal insulin secretion
- Excessive hepatic glucose production
- Abnormal fat metabolism
- Leads to diabetes with fasting hyperglycemia
- Beta cell failure (Beta cells are insulin secreting cells in pancreas)
- Hyperglycemia and is known as Diabetes Mellitus
- Increased hepatic glucose output - increased FPG level (F)
- Decreased peripheral glucose usage - post prandial hyperglycemia (PP)

How Yoga works to prevent and cure Diabetes

Yoga word derived from Sanskrit word 'Yuj',^[9] *Yoga* means union of individual of individual consciousness or soul with the universal consciousness or spirit. *Asana* being referred to pose in simple terms is one of the eight '*Ashtanga Yoga*'.^[10] *Yogasana* is more than a physical exercise. It has meditative^[11] and spiritual^[12] core.

Regular *Yoga* practice can help in reducing your blood sugar, along with lowering blood pressure, maintains weight and BMI reducing the severity of symptoms and slowing the rate of progression of disease and also lessens the further complications to the disease.^[13]

Stress is one of the major reasons of diabetes. It increases the secretion of glucagon in body. The consistent practice of *Yoga*, *Asana* and *Pranayama* and few minutes of meditation can reduce the stress and protect body from its adverse effect. This in turn reduces the amount of Glucagon and increases the action of Insulin.^[14]

OBJECTIVE OF THE STUDY

To study the role of *Yoga* in Lifestyle disorders with special reference to Type II Diabetes mellitus.

MATERIALS AND METHODS

1. Ayurvedic *Granthas* and *Samhitas*
2. Modern text
3. Online Data and Journals

REVIEW OF LITERATURE

Yogasana to prevent and keep Diabetes under control with uses and procedures.

Padmasana

Breathing in deeply and breathing out helps oxygenate your blood, and improve circulation.

It also calms the mind and relives stress; it gives your rattled nerve some much needed rest.

Steps to do this^[15]

- Sit on *Yoga* mat on the floor. Fold your legs in either *Padamasana* or sit cross legged.
- Now straighten your back, keep your chin parallel to the floor, place your hands on your knees with your palm facing upwards and close your eyes.
- Breath in deep hold your breath for five counts. Exhale slowly. Repeat this process at least ten times.

- Once you are done, rub your palms together till they are warm, and place them on your eyes. Now slowly open them.

Setubandhasana^[16]

This helps in keep blood pressure in control it also helps to relax the mind.

improve digestion, relieves the symptoms of menopause in women and stretches the neck and spine.

Steps to do this

- Lie flat on your mat, with your feet flat on the floor.
- Now exhale your breath and push your palms against mat raised your back, hip and knees.
- Raised your body such that your neck and head are flat on the mat and rest of your body is in the air.
- You can use your hands to push down for added support.
- If you are flexible you can even clasp your fingers just below your raised back for your added stretch.
- Tip: Avoid this *Yoga* if you have neck or back injury.

Vajrasana

It is simple pose, great to relax the mind, improve digestion and massages the back region.

This is one and only *Asana* which can done also after meal.

Steps to do this

- In sitting position, raise your legs forward.
- Then fold both legs from knees, so that your heels pointing upwards.
- Now gently place your buttock on your heels.it is important that your heels are on either side of your Anus.
- Now place both your palms on your knees facing downwards. Sit straight so that your spine, neck

and head are in straight line. Close your eyes breath in deeply at steady rate.

Mayurasana

This pose is essentially known for its ability to regulate the working of thyroid gland. Thyroid gland is mainly responsible for metabolism in our body, also regulate digestive, reproductive and respiratory system.

It nourishes the spine with good supply of blood and oxygen, helping nervous system disorders, and improving your all-round health.

Steps to do this

- Lie down on *Yoga* mat with legs extending outwards.
- Now slowly raise your legs either by first folding them at the knees or by lifting them straight.
- Place your palms along your back and hips to support it, and raised your body while pointing your toes to the ceiling.
- All your weight should be on your shoulders. Make sure your breath slowly and lock your chin into your chest.
- Your elbows should be touching the floor your back should be supported. Hold this pose for as long as you are comfortable.
- To return to the lying position, slowly lower your body. Do not fall back to the lying position.

Halasana

This is great *Asana* for who sits long time in uncomfortable posture. It stimulates thyroid glands, parathyroid glands, lungs and provide strength to the spine.

Prevent Diabetes and abdominal discomfort. Increase appetite cures backache.

Steps to do this

- Lie flat on floor with your feet stretched out. Place your hands on your hips as you raise them use your hands as support.
- Now slowly bend your legs from hips and try to touch floor with both toes behind your head and

keep straight hands so that they are flat on the floor.

- Breath out while going up. Return with both hands supported your back and slowly lie down flat on floor.

Dhanurasana

This pose is great to strengthen your back and spine, stimulate the reproductive organs, beats stress and fatigue.

Useful in indigestion, respiratory diseases.

Steps to do this

- Lie flat on your abdomen fold your legs from knees and simultaneously lift chest head in air and grab both toes with your hands.
- Stay sometime in this position and control and your breath slowly back in normal position.

Chakrasana

The pose is great to stretch the spine and relax the muscle of the back.

It helps to relax mind and make it stress free.

Steps to do this

- Lie on your back with your arms horizontally stretched out in line with shoulders.
- Bend your knees bring your feet close to your hips. The soles of your feet should be fully on the ground.
- Swing your knees to the left until left knee touches the ground. Simultaneously turn your head to the right and look at your right palm. Make sure your shoulder blades touch the ground.
- While the body is twisted, there is a tendency for one of your shoulder blades to lift off the ground. You must work against this tendency for the stretch to be effective.
- Feel the stretch in the thighs, groin, arms, neck, stomach and back as you hold the pose.
- After few minutes, you may slowly turn your head back to the centre and straighten torso and legs. Mirror the pose on the other side.

Paschimotasana

Increases digestive fire, cures indigestion, constipation

Increases height and abdominal fat or belly fat decreases, so that helps in flattening of your tummy.

Useful in Diabetes and piles.

Maintain all over health

Steps to do this

- Sit with strengthen legs on the floor.
- Next hold the big toe of your feet with your index finger and thumb.
- Your elbow should touch the floor.
- Stay in position for few counts and inhale as you rise back to the sitting position.

Ardha Matsyendrasana

This is helpful in liver disorders, spleen and kidney functions.

In Diabetes and constipation, it is very useful *Asana*.

Back, spine and neck muscles are becoming elastic with this *Asana* in regular use.

Steps to do this

- Sit up with stretched legs in front and with erect spine.
- Bend left leg and place the heel of your left foot beside your right hip.
- Now take the right leg over your left knee and place your left hand on your right knee and right hand behind you.
- Twist the waist, shoulder and neck in the sequence to the right and look over the right shoulder.
- To come in normal position, release right hand first then waist and chest, lastly the neck and sit up relax and straight.

DISCUSSION

Madhumeha is mainly caused due to *Apathya Aahara* and *Vihara Sevana*. While describing the *Chikitsa* for *Madhumeha*, *Ayurveda Samhita* mainly focusses on *Pathya Aahara* and *Vihara* in management of *Madhumeha*. With appropriate diet and exercise such as *Yoga*, it was found that all disease i.e. obesity, diabetes, dyslipidaemia etc. are preventable. *Madhumeha* is a disease of lifestyle disorder in which we have to keep control on body weight, fat and learn to keep stress management.

For all above things *Yoga* is perfect solution in all way. By daily half hour of *Yoga* exercise, it can manage to keep weight in control, maintain Body Mass Index (BMI), and also refreshes mind and it is said that a "Healthy mind is a secret of Healthy body."

Definition of health by WHO (1978) stated that 'Health is a complete physical, mental, spiritual and social wellbeing and merely and absence of disease or infirmity.'^[17]

And one can definitely maintain good health as advice by WHO by performing the *Yoga* and prevent today's highly spreading Life style disorder that is Diabetes.

Yogasana such as *Padmasana*, *Setubandhasana*, *Vajrasana*, *Mayurasana*, *Halasana*, *Dhanurasana*, *Chakrasana*, *Paschimotasana* and *Ardha Matsyendrasana* reduces stress. The consistent practice of *Yoga*, *Asana* and *Pranayama* and few minutes of meditation can reduce the stress and protect body from its adverse effect.

CONCLUSION

Madhumeha is not only treated by medicines but also require proper diet and healthy habits i.e. exercise (*Yoga*). Once diabetes is diagnosed it remain for lifetime, with healthy habits we can control Diabetes and live a longer life happily without life threatening conditions. The consistent practice of *Yoga*, *Asana* and *Pranayama* and few minutes of meditation can reduce the stress and protect body from complications of Diabetes Melitus.

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